REVIEWS.

ART. X.—*A Practical Treatise on the Diseases and Injuries of the Urinary Bladder, the Prostate Gland, and the Urethra.* By S. D. GROSS, M. D., Professor of Surgery in the University of Louisville; Member of the American Medical Association; Author of "Elements of Pathological Anatomy," etc. etc.—With one hundred and six Illustrations. Philadelphia, Blanchard and Lea, 1851. 8vo. pp. 726.

THE object of this work, says its author, "is to present, in a systematic and connected form, a full and comprehensive account of the diseases and injuries" of the organs above specified. It is remarkable that no such work has hitherto been written in the English language—the more so since these affections are so often brought under the notice of the surgeon. The materials for such a treatise are abundant; they are to be found in the excellent, though incomplete, monographs of Brodie, Coulson, Parrish, in isolated papers by many other eminent surgeons of Great Britain and our own country, and in the numerous medical journals of both lands. Great attention has also been devoted to the affections incident to these important organs, by the surgeons of continental Europe. The task of combining and arranging into an harmonious and complete whole the mass of knowledge thus laboriously acquired and lavishly scattered abroad, could not have been committed to one more adequate to its successful accomplishment, than to the distinguished gentleman who has voluntarily assumed it. In addition to the ability and industry which would enable him to sift well the harvest of other reapers, to garner up the fine wheat and to reject the refuse, he has for years been himself an active labourer in a fertile field, and has largely added to the common heap. The result of his labours is this volume, replete with truths and principles of the utmost value in the investigation of these diseases.

The book is divided into three parts. The first part is devoted to the Diseases and Injuries of the *Bladder;* the second to those of the *Prostate Gland,* and the third to those of the *Urethra.* And in the *Introduction,* the anatomy of these organs is described in full; it contains also a chapter on the urine. Thus the author's treatise embraces a very wide range of subjects, not only those which are ordinarily comprised in systematic publications on surgery, but many others which are more rarely described.

We shall endeavour, by passing in review some of the most important of these topics, as herein discussed, to present our readers with a fair exposition of the merits and character of the work.

The first proper step towards a knowledge of the diseases and injuries of these organs, is the acquisition of their special and relational anatomy. To this important subject, Professor Gross has devoted much attention.

Medical students are too prone in their dissections to pass lightly over, or to neglect entirely, the disposition of the *fasciæ* of the various regions. Nowhere is an accurate acquaintance with the extent and arrangement of the fascial aponeurosis of more importance than in the perineum, both with reference to the lesions which occur accidentally, and to the operations which are practiced upon it. Our author, accordingly, dwells emphatically upon this anatomical element of the perineum, and upon its influence, so long as it remains entire, in preventing the urine, when poured out from a ruptured urethra, from coming in contact with the tissues around the anus and the thighs. He describes it as "a thin, delicate, fibrous lamella, of a triangular shape, which is spread over the muscles of the perineum, and is firmly attached on each side to the outer border of the branches of the pubic and ischiatic bones. In front, it is prolonged upwards into the scrotum, where it appears to become continuous with the dartos; behind, it winds around the posterior margin of the transverse muscle, and is finally inserted into the anterior layer of the triangular ligament of the urethra. This membrane consists of a single lamella, the fibres of which are for the most part disposed transversely; it is thin, transparent, and pierced at various points by the branches of the pudic vessels"—p. 35. And after giving this commonly received account, he adduces the observations of Dr. Buck, of New York, a report of which was submitted to the American Medical Association in 1848, and published in the first volume of the *Transactions* of that body. These observations are to the effect, that the superficial fascia of the perineum is continuous above with the suspensory ligament of the penis, furnishes a sheath for the corpus spongiosum urethræ, and one for each of the corpora cavernosa.

We would not be hypercritical, but we would urge that the author's description would have been more satisfactory, if, instead of speaking of this tissue as though it began and ended with the perineum, he had described it as really continuous with the superficial fascia of the abdomen. The fascia superficialis abdominis may be followed over the lower anterior face of the abdomen to the groins, where it is closely connected with Poupart's ligament, thus separating the superficial femoral from the superficial abdominal region, and preventing urinary infiltration which may have gained the latter from invading the former surface: at the median line of the abdomen, this same fascia approaching from each side forms the suspensory ligament of the penis; it likewise contributes an investing sac to each testicle and to the cord after it has escaped through the anterior ring; it constitutes also a subcutaneous investment for the scrotum, then passes downwards over the perineum, affording a sheath for each of its superficial muscles, excepting the external sphincter ani, and, winding around the transverse perineal muscles, becomes intimately blended with the posterior edge of the deep perineal fascia, or triangular ligament of the urethra; laterally, it is also firmly attached to the rami of the pubis and ischium. For a lucid account of this fascia, and for beautiful representations of it, we would refer the reader to *Maclise's Surgical Anatomy*, part 4th.

The vascular peculiarities of the perineum are well detailed, and many other circumstances which closely concern the operations upon this region.

We pass over the very full chapters on the anatomy of the bladder, remarking merely, that the author seems to have bestowed much, and careful study upon these organs, with especial reference to their interest in the operations to which they are exposed. The illustrations attached to this part of the work will be found to be very good, many of them having been originally executed for this volume.

The description of the urethra is equally full. There has been much difference of opinion among anatomists concerning the real nature of the external tunic of the urethra. Dr. Gross describes it as "a thin lamella of cellular tissue, which serves to connect the tube to the subjacent textures. It is of an erectile spongy character, and is pervaded by a great number of minute vessels, which impart to it a singularly striated aspect, not unlike fleshy fibres."

> "This reddish vascular appearance, added to the contractile power of the urethra, induced Mr. John Hunter, and afterwards Sir Everard Home, to believe that this tunic was essentially muscular in its nature. The opinion of the former rests wholly on assumptions deduced from pathological facts and reasonings; that of the latter is founded upon minute microscopical inspections. From these it would appear, that the external membrane of the urethra is made up of short longitudinal fibres variously interwoven with each other, and united together by a soft elastic substance. How far these results are worthy of confidence, is a point not easily determined. The question is still open, notwithstanding the numerous attempts that have been made to settle it. That the substance under consideration is really muscular is altogether improbable, though there are few practical surgeons who will deny its contractile power in certain states of the urethra"—p. 83.

This question may now, we think, be considered as settled by the observations of Kölliker, a very distinguished and accurate investigator, and one every way worthy of confidence. His researches into the structure of the spleen and mucous membranes, his recent treatise upon the special anatomy of the tissues, and his miscellaneous contributions to the medical periodicals of his own country, have made his name a prominent one. According to Kölliker, the outer coat of the urethra is composed of contractile fibre mixed with common elastic tissue, and is similar to the contractile tissue, which he has demonstrated as entering into the constitution of the spleen and mucous canals. The relative proportion of the contractile, to the common elastic element, varies in different portions of the urethra, being least abundant where the ordinary muscular tissue exists in quantity. He terms it the *simple muscular tissue.* The arrangement of this anatomical element varies according to situation. It is most complicated in the prostatic portion of the canal, and in the prostate gland. This tissue is so abundant in the latter body, that the true glandular structure forms only one-third, or one-fourth, of the whole mass. If the mucous membrane be raised from the prostatic portion of the urethra, a layer of *longitudinal* fibrous tissue of a yellowish colour comes into view—

> "Connected, internally to the sphincter vesicæ, by a thin and indistinct layer of fibres, with some of the longitudinal muscular fibres of the bladder; but by far the greater part of it is unconnected with this latter; it consists half of fibro-cellular tissue with many nucleus-fibres, and half of evident, smooth muscular fibres with characteristic nuclei. After this, and external to it, follows, secondly, a strong layer of yellowish *circular* fibres of muscular and elastic tissue. This layer is connected above with the sphincter vesicæ, where also it is most developed; whilst below, it becomes gradually thinner, and below the caput gallinaginis is either lost, or appears only in very small quantities. On removing the several muscular layers, we come at last to the proper glandular tissue of the prostate, of which individual lobes penetrate among the circular fibres just mentioned, their excretory ducts passing through the longitudinal fibres."

In the membranous part of the urethra this smooth muscular tissue is less developed; and here it is less requisite, because this part of the canal is surrounded by a distinct set of muscles. Under the mucous membrane, the cellular tissue of which abounds in elastic fibres, is a layer of longitudinal fibres connected with those of the prostatic portion.

> "These fibres consist for the most part of fibro-cellular tissue with nucleus-fibres, and include, in small numbers, undulating, delicate, and curved contract-

> ing fibre-cells (of the nature of smooth muscular fibres), which may be in part isolated, and are from 0.07 to 0.1 of a line long, from 1.002 to 0.003 of a line wide. They contain small nuclei from 0.012 to 0.014 long, and are more easily found in recent specimens than in those treated with acetic acid. External to these longitudinal fibres, there is a strong layer of transverse fibres, which belong mostly to the *musculus urethralis*. Some of these, however, especially those belonging to the inner layer, display some strong bundles of smooth muscular fibres, together with fibro-cellular tissue and nucleus-fibres, and a partial mixture of fasciculi of the transversely striated fibres of the *musculus urethralis*."

The smooth muscular fibres are still less developed, generally, in the spongy portion of the urethra.

> "At a certain depth, however, some longitudinal fibres are distinguishable, with a more or less considerable admixture of smooth muscle, which fibres cannot be regarded as beams of the corpus spongiosum, since they have no venous spaces between them, but rather form a continuous membrane which limits the corpus spongiosum towards the mucous membrane." (Quoted from the *Cyclop. of Anat. and Physiol.*, Art. *Urethra*, p. 1251.)

We abstain from any comments upon the chapters devoted to the consideration of the *urine*, and of *malformations*, *imperfections*, and *injuries* of the Bladder.

The third chapter discusses the subject of *inflammation* of the bladder. The *symptoms* of inflammation of this viscus are detailed as fully as they are ordinarily described in general systematic treatises—more so than in the usual text-books. But in such a work as the one which we are now reviewing, and from the pen of Professor Gross, we had anticipated much more than this. We had hoped that he would devote some considerable space to the description of anomalous cases, and such as are complicated with disease in other organs; in short, that, from his long clinical experience, the author would contribute an amount of information which the active practitioner might apply to the elucidation of the difficult and complex cases of cystitis which are so often presented to his notice. The *treatment* is much more fully dwelt upon. The professor very properly insists upon the importance of prompt and free venesection. He says—

> "There are few cases of acute cystitis which resist this means beyond the second or third day, and such as do are always more easily managed afterwards by mild treatment. I have repeatedly cut short, by the lancet alone, attacks of this disease so severe as to leave the patient no rest, and so threatening as to induce the worst apprehensions for his ultimate recovery. The same treatment has often promptly succeeded in my hands after other and less efficient means had been employed for days with little or no benefit"—p. 125.

This powerful remedial measure is not, however, to be indiscriminately employed, but with regard to the age and general condition of the patient and the duration of the attack. Neither does the author restrict its employment in the more severe forms of the malady which are accompanied with great constitutional reaction, but finds it equally applicable and advantageous in those which are attended with trifling general disturbance. In addition to this agent, the necessity of free evacuation of the bowels by cathartics and enemata is urged, avoiding such as are disposed to produce much irritation of the rectum. Diaphoretic medicines are also advised, particularly tartar emetic, Dover's powder, and an effervescing draught, according to the grade of the symptoms and the condition of the stomach. Diuretics are to be given cautiously; such as are very stimulating are to be avoided. The local means most highly recommended are topical bleeding, anodyne enemata, or suppositories, warm fomentations and the hip-bath. Judicious modifications of this general plan of treatment are suggested in cases of cystitis produced by the presence of foreign substances in the bladder, by cantharides, gout, &c. &c. With regard to "*direct medication*," the author is of opinion that "it is more likely to do harm than good. It is only in the latter stage of the disease, when the acute symptoms have disappeared, that such a course would be at all admissible, and then it could hardly be required." With these sentiments we are sure that all judicious men will concur.

The reader will find in the other sections of this chapter interesting descriptions of forms of disease which, although they are happily rare, do sometimes occur, involving great suffering on the part of the patient, and anxiety on the part of the physician. These are "fibrinous exudation of the bladder, suppuration and abscess, gangrene and ulceration." The author's account of these morbid processes and conditions is rendered more valuable in consequence of the recital of numerous illustrative clinical cases.

One of the most complete chapters in the volume is that on catarrh of the bladder. Dr. Gross denies the necessity of distinguishing two varieties of cystorrhœa, the acute and the chronic, inasmuch as the acute form "does not differ in any respect from ordinary acute cystitis, described in a preceding chapter." He therefore describes the affection as being chronic. The same view is taken of this subject by Dr. Wood in his excellent work on the Practice of Medicine, who treats of this disease as a *chronic cystitis*. Practically, this view may be sufficiently correct, the symptoms of cystorrhœa, whether in the acute or the chronic stage, demanding pretty much the same medication as those of ordinary cystitis of the corresponding grade. But pathologically considered, it seems to us that there is a difference between catarrhal inflammation and common inflammation of a mucous surface. The distinction may be best seen in the two affections of the conjunctiva; where, we think, the appearance of the vascularity, the alteration in the physical condition of the membrane, the character of its secretion as to aspect and the possession of contagious or non-contagious properties, are materially dissimilar from their commencement respectively. And if this be true of the conjunctiva, why not also of the mucous membrane of the bladder? In what especial particulars this difference consists we are not prepared to say. However this may be, the description of chronic vesical catarrh, as given by Dr. Gross, is very complete.

> He says, "Cystorrhœa is always dependent, directly or indirectly, upon some obstacle to the evacuation of the urine, or upon a diseased condition of the bladder itself. Hence the most common exciting causes are stricture of the urethra, the presence of a calculus, hypertrophy and enlargement of the prostate gland. Paralysis of the bladder, whether produced by over-distension of the organ by urine, or by injury or disease of the spine, frequently gives rise to this state. The muscular fibres having lost their expulsive power, the water is never completely evacuated at any one time, even when the catheter is used, but a portion remains in the bottom of the bladder, where it is speedily decomposed, and acts as an irritant to the lining membrane, followed by an inordinate secretion of mucus. Cystorrhœa is a constant attendant upon sacculation, ulceration, hypertrophy, and carcinoma of the bladder. When the affection is once established, it may easily be aggravated or re-induced by exposure to cold, exercise on horseback, sounding, venereal excesses, drastic purgatives, indulgence in ardent spirits, stimulating food, irritating injections, diuretic and other remedies, as turpentine and cantharides, over-distension of the bladder, neuralgia, retrocession of gout, repulsion of cutaneous eruptions, local injury and disease of the adjoining parts, as the anus, rectum, vagina, and uterus."

The progress of the disease is then described, and its symptoms are detailed in a very satisfactory manner. The following quotation possesses some interest:—

> "Patients affected with cystorrhœa are sometimes impotent, even if they are comparatively young. I have met with several instances of this kind. In one remarkable case, the gentleman, forty-four years of age, had experienced no sexual desire for upwards of six years, though he was naturally of an amorous disposition. His penis had become soft and flabby, and had not been in a state of complete erection for a long time. He had occasional emissions, but they were always unaccompanied by the proper feeling. Owing to the frequent micturition which forms so striking a feature of this disease, and the severe straining which usually attends it, catarrh of the bladder is often complicated with hemorrhoids, prolapsion of the bowel, swelling of the testes, and even with hernia."

The *diagnosis*, remarks the author, involves the distinguishing of this complaint from seminal emission, gonorrhœa, and suppuration of the bladder; and this cannot be a very difficult task.

Passing over the observations upon the prognosis and the anatomical appearances, we are brought to those concerning the *treatment* of cystorrhœa. The cause of the disease having been ascertained, and if possible removed, the medication which the author advises consists in the local or general abstraction of blood, mild purgation, and the employment of certain internal remedies which act upon the kidneys and modify the character of their secretion. Of the latter substances, the author most approves of the balsam of copaiva in the dose of from ten to twenty drops repeated three or four times daily. Besides this, the turpentines are advantageous, as also the infusions of buchu, uva ursi, epigœa repens, the muriated tincture of iron, colchicum, benzoic acid, &c. &c. Among the direct applications are enumerated tepid water, introduced by a double-chambered catheter which will permit the fluid to enter the bladder through one side and to escape by the other, and various astringent and sedative solutions. With regard to cauterization by means of the solid nitrate of silver, the author has made trial of it in a few instances, but does not think it effected any decided impression upon the disease. He thinks it chiefly applicable to those cases which are dependent on inflammation of the neck of the bladder, accompanied with an unusual degree of sensibility.

> "In obstinate and intractable cases of cystorrhœa, where all other remedies have failed to afford relief, it has been proposed to penetrate the neck of the bladder by means of an incision similar to that made in the lateral operation of lithotomy. The object is to afford a free outlet to the mucous secretion as fast as it takes place, and to put the organ thereby in a state of comparative repose. In a word, the principle is the same as in the operation for anal fissure and fistula. The wound is not permitted to close too soon, and yet care is taken lest it become fistulous."

A case is then detailed in which this operation, originally suggested by Mr. Guthrie, but first performed by Dr. Parker, of New York, was executed by the latter. After much previous and protracted suffering on the part of the patient, and a variety of medical treatment,

> "Dr. Parker was induced to perform the lateral operation on the 23d of November. The incision was quite free, and was followed by the loss of about sixteen ounces of blood. For the first twelve hours the patient experienced severe pain in the bladder, urethra, and left thigh, but this gradually yielded to the liberal use of anodynes. A very decided improvement of the former symptoms soon became apparent; the pulse diminished in frequency; the urine passed off freely by the wound; the patient slept better, and for a time he

seemed in a fair way of recovery. About the end of the third week, however, he became worse; his strength now rapidly declined; the vesical distress increased, and he began to exhibit all the evidences of a poisoned state of the system from the retention or absorption of urea. He continued in this manner until the 24th December, when he expired, death having been preceded by delirium and coma."

Besides the diseased condition of the bladder, the kidneys were found affected, one enlarged and congested, the other small and filled with tubercular matter; both lungs also contained tubercles; in the left was a cavity. This case was, consequently, an unfavourable one for the operation; but Dr. Gross says—

> "I shall certainly not hesitate to resort to it the first favourable opportunity that may present itself to my notice. The operation, it seems to me, is particularly applicable to that form of cystorrhœa in which there is marked hypertrophy of the prostate gland and the muscular coat of the bladder."

We confess that we are not a little surprised to meet with such decided commendation of this expedient from Professor Gross. We find him teaching, at page 425, when speaking of *lithotomy*, that

> "No surgeon, having a proper regard for his own character and the dignity of his profession, would be likely to operate in case the patient is affected with organic disease of the lungs, or of any other important viscera. Serious lesion of the *kidneys, ureters, bladder*, and *prostate gland* also forbids interference. In short, wherever the health is much impaired by previous suffering, not solely dependent upon the presence of the urinary concretion, the judicious surgeon will hesitate not a little before he will resort to the knife."

Again, in his enumeration of the morbid appearances found after death from cystorrhœa, he says, p. 169:—

> "After some time" (and we presume that this limitation must certainly apply to the 'obstinate and intractable cases of cystorrhœa, where all other remedies have failed to afford relief,' p. 177, for which the author considers the operation in question recommendable, and '*the credit*' of doing which he awards to Dr. Parker), "the muscular fibres become hypertrophied. The cellulo-fibrous lamella is also much thickened, as well as increased in density, and the mucous membrane, particularly that portion which corresponds with the bas-fond of the organ, is often thrown into large heavy ridges. In some instances the lining membrane is ulcerated, covered with patches of lymph, or protruded across the muscular fibres in the form of one or more pouches. The walls of the bladder are frequently five or six times the natural thickness. The kidneys, ureters, and prostate gland are generally implicated in the mischief, sometimes to a fatal extent."

Now, as it is not the mere presence of the stone in the bladder, but rather the diseased condition of this and other associated organs, which constitutes the objection to lithotomy, why should it be considered any the less improper to open the bladder in a case of cystorrhœa, in which the organ is not fretted and inflamed by the continued irritation of the calculus, and by the removal of which, in the other case, one important element in the morbid condition of the parts would be withdrawn?

We cannot reconcile these conflicting statements, neither can we at all unite with Professor Gross in commending this operation under any circumstances. Cases of moderate severity and duration will not require, and those of long continuance and unusual aggravation will, in the vast majority of cases, and of necessity, die from this "*ultima ratio.*"

The next subjects treated of are the "*bar-like ridge of the neck of the bladder,*" a peculiar form of local hypertrophy of this organ, first particularly described by Mr. Guthrie; and *sacculation of the bladder*, like the other a consequence of any long-continued obstruction to the discharge of the urine.

The *fifth* chapter discusses the nervous affections of the bladder, comprising *irritability*, *neuralgia*, and *paralysis* of the viscus. These are all exceedingly interesting affections, requiring for their successful and rational treatment considerable diagnostic skill and therapeutic knowledge. The author seems to have had frequent opportunities of studying these diseases, and his views concerning them will well reward a careful study.

In the succeeding chapter, he describes the *heterologous formations of the bladder*, scirrhus, encephaloid, colloid and melanosis, and tubercular disease. After this follow chapters on polypous, fungous, erectile, and other morbid growths of the bladder; on worms; serous cysts and hydatids; fœtal remains; hair, and air in this organ. Another treats of hemorrhage of the bladder. The chapter on *retention of urine* is very well written. The remarks upon the diagnosis of this condition are worth a careful perusal.

> "One would suppose that retention of urine could seldom, if ever, be mistaken, when we consider its mode of origin, progress, and symptoms, which are usually sufficiently characteristic. Yet, strange as it may appear, some very singular as well as very unfortunate blunders have been committed, in this respect, and that, too, by men who, from their skill and experience, ought to have known better. The affection with which it is most liable to be confounded is ascites, or dropsy of the peritoneal cavity."

And in the sequel some apposite cases are quoted. Retention of urine has been confounded, too, with a "supra-pubic abscess." And, inasmuch as pregnancy has often been mistaken for ascites, and by very distinguished physicians, and the error has even proceeded so far as actually to lead the surgeon to tap the swollen part, we should suppose that retention of urine may be just as well confounded with this condition of the uterus, or *vice versâ*. The points to be attended to in the diagnosis are sufficiently detailed by Dr. Gross to enable any one of ordinary discrimination, and particularly if he be upon his guard, to avoid so egregious and discreditable an error. The *treatment* of course consists in emptying the distended viscus by the aid, if possible, of the catheter. The author advises, very properly, that a portion only of the fluid be removed at once, if the quantity be at all considerable, in order that the bladder may have time to recover its tone, and that the pressure to which the abdominal and thoracic organs have been so long subjected shall not be too suddenly removed. He enumerates the most common causes upon which retention of urine depends, and by the cure or withdrawal of which a permanent recovery may be gained. The first class of causes affects the urethra, the bladder, or the head of the penis. To the first mentioned seat of the obstruction belong organic stricture, a calculus, clotted blood, coagulating lymph, inspissated mucus, or an enlarged mucous follicle, and, in the female, the mal-direction of the urethra; moreover, the obstacle may be exterior to the canal, as a simple or malignant tumour, an abscess, a collection of blood, a boil, or an ordinary swelling from contusion, any one of which may produce temporary obliteration of the channel, by the mere pressure which it exerts at some point. To the second appertains hypertrophy of the prostate, or the presence of some earthy or animal concretion, or any tumour within the pelvis of sufficient size to press upon the neck of the bladder. In the last category are included an imperforate prepuce, priapism, &c. These and other causes of retention, and the treatment, are ably expounded.

The other two sections of the same chapter are very appropriately taken up with observations upon the two expedients most commonly resorted to for the purpose of overcoming the difficulty with which we have just now been occupied; these are catheterism and puncture of the bladder. The first of these occupies a brief space in the author's volume. We cordially concur with him in his view of the importance of this apparently simple operation, and the very great skill which is requisite to perform it well. We should have been better pleased to be favoured with a much more extended consideration of the subject from one whose ideas concerning it are so correct, so far as he has expressed them, and whose practical skill in manipulating with the catheter, is, we have no doubt, so great. The directions which he gives, however, seem to us to apply only to the ordinary cases in which a surgeon is called upon to empty the bladder, and to leave untouched the only really troublesome instances which occur to him; the only ones with reference to which he would think it worth while to consult those whose ingenuity and tact are superior to his own. We know that, no matter how many additional pages Professor Gross had devoted to this point, no matter how lucid and comprehensive his lessons, the reader could not from all have acquired the delicacy and the dexterity which alone can enable him to accomplish his purpose in employing the catheter. Still it would have been satisfactory to him, no doubt, to find in this treatise that the whole ground had been thoroughly gone over.

Puncture of the bladder for the purpose of emptying it of its contents is very rarely requisite. Professor Gross says of it:—

> "It is only in cases of excessive enlargement of the prostate gland, attended with great tenderness and swelling of surrounding parts; in laceration of the urethra, and infiltration of urine into the scrotum; and in deep-seated, impassable stricture that the operation should even be seriously thought of. All other forms of retention will, there is reason to believe, yield to the catheter, aided by time and by soothing measures."

Dessault performed the operation but once during the eight years of his chief surgeonship of the Hôtel Dieu. Mr. Liston had resorted to it only once, so late as 1846. Sir Benjamin Brodie says:—

> "Surgeons who see a great number of cases of retention of urine may, in the course of their lives, be called on to perform it in a *few* instances. Those who perform it frequently must often perform it unnecessarily; at least, this is what I should say, judging from my own experience."

Professor Gross has never performed it, though he gives the accounts of two cases, in which he was upon the point of executing it, when the patient in each instance was relieved in an easier and safer manner—one spontaneously, the other by the catheter. The merits and the way of accomplishing the three principal modes of opening the bladder, viz., through the rectum, perineum, and the supra-pubic region, are narrated in the text. From a review of M. Mondière's table of ninety-two cases of puncture of the bladder, the professor infers that

> "The recto-vesical operation is less fatal than either of the others; but that it is more liable to be followed by fistula, infiltration, and abscess. As respects mortality, the perineal and supra-pubic punctures are about on a par. The proportion of fatal cases to the number of recoveries is remarkably small." (Vid. *Am. Journal Med. Sci.*, vol. iii. 495.)

The 15th, 16th, and 17th chapters are devoted respectively to the subjects of *incontinence of urine*, *hernia of the bladder*, and *urinary deposits.* These are succinctly, but comprehensively, treated of.

We have now reached in our cursory review of this interesting volume, the all-important topic of *stone in the bladder*, to which the preceding chapter has very advantageously cleared the way. To this subject, the author has devoted more than 170 pages. The chapter is subdivided into sections, each of which discusses some special point in the pathology of calculus: first, its nature and causes; second, its physical and chemical properties; third, its situation; fourth, its occurrence among the inferior animals; fifth, its symptoms; sixth, its physical signs, sounding and diagnosis; seventh, its pathological effects; eighth, its treatment, embracing a description of all the operations practiced for its removal from the bladder. The entire subject has evidently been very carefully studied, and the reader will find here presented to him a very complete exposition of the matter. We do not think that any thing is said which can with propriety be objected to, while the essay, for such it really is, abounds with important truths. We shall make an extract from the text, here and there, as we turn over the leaves, instead of attempting any formal commentary upon so familiar a subject.

In speaking of the nature and causes of stone in the bladder, he says:—

"Coloured persons appear to be remarkably exempt from calculous complaints. Whether this is the case in all countries where the negro resides, I am not informed; but it is certain that the circumstance obtains, in an eminent degree, in the black population of the southwest. During a residence of ten years in Kentucky, I do not recollect to have met with a solitary example of gravel or stone in a coloured person. My impression is that Dr. Dudley, in his large calculous practice, has never cut more than two or three individuals of this description. To what this immunity is due, our knowledge does not enable us to determine. The circumstance is so much the more surprising, when it is remembered that the coloured people of that region are constantly exposed to hard labour, and that their fare is often of the coarsest character."

This is a very interesting fact, and it may be owing to the very circumstances mentioned, viz.:—

"That the coloured people *are* constantly exposed to hard labour, and that their fare *is* often of the coarsest character."

Probably their fare is never luxurious, or but in very exceptional cases; and this, together with the constant, though by no means exhausting labour (for we believe it is almost universally conceded that the slave very rarely works so hard, or accomplishes so much in the same space of time, as the white labourer), to which this class of our population is subjected, are precisely the conditions which are the most likely to protect one from calculous complaints, and to counteract the calculous diathesis.

The relative frequency of calculus in children and adults seems to be a subject of doubt.

"Of 5,376 cases mentioned by Civiale, in his treatise on calculous affections, 2,416 were children, 2,167 adults, and 793 old persons." But among 1,151 children admitted into the Foundling Hospital, London, during 27 years, only *three* cases of stone occurred; in the Military Asylum, at Chelsea, in 6,000 inmates not one case; in the Hôpital des Enfans, Paris, where 3,000 children are annually received, during the seven years from 1835 to 1842, the average number of cases *has been under four;* at the St. Marylebone Workhouse, where there have been on an average during many years between 400 and 500 children, there *has not been a single case* of stone during the last twenty years. The returns from different countries show a great difference in this respect.—(*Brit. and For. Med. Rev.*, vol. xiv. p. 165.)

Of	356	operations	reported by	Dupuytren,	only	97	occurred	in children	under 15.
"	1,629	"	"	Saucerotte,	"	1,195	"	"	"
"	478	at Norwich,	"	Marcet,	"	227	"	"	"
"	666	" Naples,	"	Renzi,	"	315	"	"	"
"	643	" "	"	"	"	321	"	"	"
"	469	" St. Petersburgh,		.	.	357	"	"	"
"	175	" Austria,	.	.	.	55	"	"	"
"	239	" Bavaria,	.	.	.	116	"	"	"
"	106	" Bohemia,	.	.	.	28	"	"	"
"	145	" Denmark,	.	.	.	14	"	"	"
"	42	" Egypt,	.	.	.	1	"	"	"
"	2,822	" France,	.	.	.	1,347	"	"	"
"	1,058	" Lombardy,	.	.	.	796	"	"	"
"	49	" Rome,	.	.	.	10	"	"	"
"	140	" Sardinia,	.	.	.	97	"	"	"
"	127	" Ulm, .	.	.	.	64	"	"	"
	9,144	. .	.	.	.	5,040			

The following observations are very appropriate:—

"How far the constant use of hot bread, biscuit, and pastry, which are consumed in such enormous quantities in this country, especially in the South-western States, conduces to bring about calculous disorders, we have no means of deciding. That the daily employment of these articles is prejudicial, no one can doubt. Their influence in producing dyspepsia, so common in every part of the Union, is familiar to every observer, and need not, therefore, be discussed in this place. Hot bread in its various forms, frequently only half baked, and generally but half masticated before it is swallowed, is sufficient, if used for any length of time, to wear out the strongest stomach, and to break down the most vigorous frame. What the effects of such a state of the system must be upon the urinary secretion, every pathologist knows. A weakened digestion, with a sour and flatulent state of the stomach, constipation of the bowels, and an irritable condition of the brain, cannot by any possibility produce a healthy blood, any more than a morbid state of the blood can produce a healthy urine."

This is all true, as every one will admit; and one might write a very amusing, or a very serious, commentary upon it, as the spirit prompted at the moment. It is melancholy to see how these vicious practices have in this country seized upon all classes and all ages. People seem determined to continue in error, in some one of these respects at least. Where "the raw material" is of the best description, it is almost always spoiled in the preparation for consumption; and when this is not the case, it is sure to be, as Professor Gross says, "but half masticated before it is swallowed." The last habit is forced upon the young by domestic regulation, and when these grow up to manhood, it is still retained from the fancied pressure of business, or from the more inane force of custom. We have repeatedly been called upon to administer an emetic to children in one of our largest and best regulated public institutions, where dinner *must* be despatched in a given limited time, for the purpose of relieving their stomachs from the *large masses* of unchewed meat and potatoes, which had produced convulsions. And every one whose views of social enjoyment and the process of nutrition are at all what they should be, must often have seen with amaze and regret how rapidly dinner disappears from the tables of private families and of our best city hotels; where gentlemen and ladies devour their food as greedily and impetuously as famished beasts their prey, their faces wearing the same expression of anxiety and thought as when they are considering some weighty matter of business, or some important domestic responsibility, entirely forgetful or ignorant that, for sanitary as well as social benefits—

"Rien ne doit déranger l'honnête homme qui dine."

The physical and chemical properties of calculi, and the various circumstances attending and modifying their situation in the bladder, are narrated at considerable length; and many interesting notices are introduced of their existence in the bladders of inferior animals, of birds, fishes, and reptiles. We need make no comment upon these sections of the volume, nor upon the detailed account of the symptoms of stone. We must call especial attention, however, to the author's remarks upon the physical diagnosis of this affection, as we think them very excellent. He directs how and with what kind of an instrument the "*sounding*" of the bladder should be performed; enumerates the dangers attending or resulting from this operation, if badly done, or executed under unfavourable circumstances; describes the phenomena elicited by the instrument, and their variations under different conditions; he also details the many sources of error in sounding, and explains how these errors may be occasioned; and finally shows how a calculus may really be present in the bladder, and yet give rise neither to characteristic physical phenomena upon sounding, nor to rational symptoms.

The *pathological effects*, or, to speak more correctly, we conceive, the *anatomical* lesions, produced by the existence of a stone, are next pointed out, and then follows the section upon the *treatment*.

This subject naturally occupies a large part of the author's attention. He has spared no effort to make this portion of his treatise complete, and it affords us great pleasure to express our satisfaction at the result of his labour. We are presented with an ample account of the regimen to be pursued, and of the medications which have been found most serviceable; of the plan of dissolving the calculùs by means of injections into the bladder, and by the agency of electricity; of the method of removal of entire calculi through the urethra; of lithotripsy, the modes by which this proceeding is accomplished, the conditions favourable to it, and those which preclude it, the dangers attending it, and the accidents produced by it. We will stop for a moment in our enumeration of the prominent topics discussed, to quote a few lines. Professor Gross says, at page 418:—

> "I can perceive no reason for administering chloroform in this operation, except in the case of children. On the contrary, I think it ought generally to be avoided. For, independently of the fact that the operation is usually unattended with much pain, it is a matter, I conceive, of no little importance that the patient's mind should be perfectly clear, in order that he may promptly inform the surgeon of his suffering, should any arise, whether from too rough a manipulation, too great a size of the stone, or the seizure and inclusion of the mucous membrane of the bladder. Such contingencies may, it is true, be remote; but it is well enough to be aware of them, and to guard against their occurrence. In children, on the contrary, who are unable to give any satisfactory intimation of their real feelings, anæsthesia is of great advantage. They are saved from suffering, and being rendered perfectly quiet and tractable, the surgeon may deliberately proceed with his manipulations, satisfying himself by a thorough examination of every part of the bladder."

We are glad to find that the opinion which we expressed on this question in our remarks upon Mr. Skey's *Operative Surgery*, in the preceding number of this Journal, are so authoritatively confirmed. We are not prepared to admit, however, that even in the case of children, who are about to undergo the operation, anæsthesia is expedient; for we conceive that it is just as important to avoid injuring a child's bladder as an adult's, and therefore equally unwise for the surgeon to deprive himself of the warning which the child's sensitiveness to injury may furnish him; but in the preparatory sounding of either adults or children, if the operation be painful, or excite much alarm or agitation, we see no objection to resorting to this calmative agent, but would rather recommend it.

The operations of *lithotomy* are next described, and the circumstances relating to this procedure are exhibited, as in the case of lithotripsy, viz., the instruments which are most serviceable, the mode of operating, the incision of the prostate, the accidents which are liable to complicate the operation, and the means of counteracting or preventing them. The author prefers the lateral operation, and gives an exceedingly interesting series of his own experiences with it, twenty-four in all, which were all successful. He generally employs the scalpel, rather than the gorget; though sometimes he uses an instrument resembling the beaked-knife of Sir William Blizard. The merits of the three instruments are the subject of a few comments. But while the author prefers the lateral operation, he canvasses very fairly the claims of the other methods of cutting into the bladder—the bilateral of Le Dran, the quadrilateral of Vidal de Cassis, the recto-vesical of Sanson, and the suprapubic or the high operation. The operation of *lithectasy* is likewise adverted to—viz., making an opening into the urethra through the perineum, smaller than in ordinary lithotomy, and slowly dilating the neck of the bladder until the aperture is sufficiently capacious to admit of the passage of the foreign body. We have also an account of the operation "*en deux temps*," as it is called, one portion of the procedure having been accomplished, but the whole not executed until after the lapse of some time, the patient having recovered from the effects of the first stage, or some obstacle which existed to the completion of the undertaking having been removed. The subject of stone in the bladder is concluded by some observations concerning the complaint in the female and the methods of relieving her. In fine, we do heartily assure our readers that they will find this whole matter most admirably treated of by Dr. Gross.

The first part of the book is completed by some sensible comments upon foreign bodies in the bladder.

The second part is allotted to the consideration of injuries and diseases of the *prostate gland*. We pass over the chapter upon *wounds* of this body, and that referring to *inflammation* of the same, together with certain conditions of this organ, which usually originate in prostatitis—abscess and ulceration.

Hypertrophy of the prostate is considered in the third chapter. The author dissents from the opinion of Home and others, that the left lobe of the gland is more frequently involved than the right:—

> "The opinion is not borne out by the results of dissection, and no reason, anatomical, physiological, or pathological, can be assigned for the occurrence, supposing it to exist."

This is probably the truth. Rokitansky says:—

> "The lateral lobes are the chief seat of the enlargement, which affects both uniformly, or predominates on one side."

The details of the modifications in form, dimensions, and internal structure which this exaggeration of the nutritive process impresses upon the gland are ample, and are well illustrated by many original drawings from nature. Two varieties are described: one in which the body is rendered preternaturally hard, so that the tissue tears with difficulty, and opposes considerable resistance to the scalpel; the other, more soft and vascular, and usually larger. In both, when the gland is cut or torn, numerous granulations are seen scattered over the surface, more abundant in the soft than in the hard variety, and containing a milky fluid also more copious in the former than in the latter. The intimate nature of hypertrophy of the prostate does not seem to have been sufficiently investigated. Rokitansky's account is very unsatisfactory. He says:—

> "The substance of the gland in these cases appears normal, occasionally a little softened, of a spongy elastic consistency, and succulent, *i. e.*, its ducts contain much secretion; in other cases it appears tough and coriaceous, without visible alteration of structure. The formation of fibrous tumours is often complicated with this benignant variety of enlargement."—*Path. Anat.* vol. ii. p. 257, Syd. ed.

C. Hanfield Jones, in a paper on the prostate gland, published in the *London Medical Gazette*, vol. v. p. 328, describes the terminal follicles of this body as being

> "Each, for the most part, invested and separated from the adjacent ones by a quantity of connecting tissue disposed in fasciculi, which are closely woven together, and include spaces which are occupied by the glandular structure; it consists principally of the white fibrous tissue, but also contains numerous bands resembling closely those of organic muscle."

And he thinks that in senile hypertrophy of the organ, this fibrous tissue becomes especially increased, thereby producing the granulated appearance seen on cutting into the gland, and the knobbed condition of the surface which sometimes exists. Professor Gross adopts this opinion. It is probable, however, that in many cases there is a real development of true glandular structure, lobes, lobules, and acini, as well as of parenchymatous tissue; but we should presume, without having any positive data to predicate the opinion upon, that such a development is more frequent in that variety of prostatic hypertrophy which occurs before old age, from irritation and increased vascularity of the organ, and not in advanced life, when the growth of the higher grades of tissue is much less active, and when those of inferior anatomical and physiological importance predominate. This view is rendered more probable, too, by the difference in colour of the gland in senile hypertrophy, as compared with that which is observed earlier in life; in the former it is of a grayish or drab tint, in the latter the red predominates, showing a greater degree of vascularity in the last.

The author's remarks concerning the causes of this affection, the periods of life in which it is met with, its progress and symptoms, are valuable, and, we believe, very correct, though different in many respects from the currently received views. And his observations on the diagnosis of the disease, and the morbid connections which it establishes with other organs, are equally commendable. He pretends to no peculiar success in the *treatment* of this troublesome and painful malady—of the senile variety, at least—but makes the reader aware of all that can be done, and how to accomplish it.

The remaining pages of this part of the book are taken up with sufficiently extended notices of the less common affections of the prostate.

The third and last portion of the volume is devoted to the *diseases and injuries of the urethra.* It is not necessary for us to follow the author through the whole of this chapter. For, from what we have seen of the book, we can assure our readers that he has not slurred over any important topic, but has given a fair consideration to all. We shall, therefore, examine only a very few of the chapters which remain. We may remark that we do not see why he should have omitted all consideration of *inflammation of the urethra.* This is a disease which would be benefited by particular study, for certainly there is none in the whole category of acute inflammations which is more troublesome and perplexing in its treatment.

The investigation of the pathology and treatment of *stricture of the urethra* is the object of the third chapter of this part of Professor Gross's valuable work. He divides strictures into the *spasmodic* and the *organic;* but limits his observations to the latter. We do not see any reason why spasmodic stricture should have been neglected in such a treatise as this, rather than neuralgia of the urethra and of the bladder, to each of which a chapter has been allotted. It is surely a very distressing and troublesome affection, one which requires proper treatment, and which is very much benefited by wise measures, as well with reference to its permanent prevention as for its present relief. And we think its due consideration is of the greater consequence, inasmuch as it can scarcely fail, if its visitations are frequent and protracted, to induce a permanent thickening of the mucous membrane of the urethra by the considerable nervous and vascular excitement which these paroxysms occasion. Moreover, the analogy between the lining membrane of the urethra and other mucous membranes, as well as accurate observation of the affection in question, render it almost certain that a frequent cause of the spasmodic stricture is a greater or less degree of evanescent vascularity of the tissue, which may become, by a very easy transition, a permanent condition.

Organic stricture may, according to the text, be either simple or complicated, common or traumatic, partial or complete, soft or callous, dilatable or undilatable, permeable or impermeable, recent or old. As to its *seat,* the author admits that "no part of the urethra, except, perhaps, the prostatic, is entirely exempt from organic stricture." But this exception is not a positive one, although it is undoubtedly true that the prostatic portion of the canal is very rarely affected. Ricord, however, has seen this portion of the urethra narrowed, independently of the prostate, and a similar case is cited by Mr. Crosse, of England, p. 616. The most common point of coarctation is variously stated by different authorities, as Dr. Gross remarks. He says from his own experience, he infers that

> "The affection is most common, first, in that portion of the canal which is comprised between the scrotum and the head of the penis; secondly, at the membranous part of the tube, or at the junction of this with the bulbous part; and, lastly, at the anterior extremity, within a few lines of the meatus. I have never seen a stricture at the prostatic portion of the canal, and therefore conclude that it must be exceedingly rare here, if indeed it ever exists"—p. 616.

With reference to the *number, form, consistence, colour, and symptoms* of organic strictures, we see nothing in the text which need detain us.

In conducting the *physical exploration* of the urethra, to establish a correct diagnosis, the author prefers the use of a common silver catheter, of moderate size and a little conical at the extremity, and where greater accuracy is requisite a wax bougie; he also is disposed to think favourably of the gutta percha bougie, suggested by Dr. Bigelow, of Boston, which should be introduced sufficiently warm to receive and retain the impression of the stricture into which it is passed. He does not attach much value to examinations made in this manner for the purpose of ascertaining the form and dimensions of the obstruction. Whatever may be the instrument employed for the exploration, the necessary caution is strongly inculcated.

> "All examinations of this kind should be conducted with the greatest gentleness and deliberation. All rough and hasty proceedings are calculated to do harm, by exciting spasm and irritation, and should, therefore, be carefully avoided. By slow and cautious manipulations, the point of an instrument may often be insinuated into the tightest stricture, or into one so tender and irritable as to resent every attempt of an opposite description"—p. 625.

The effects of continued stricture of the urethra upon this canal itself and other organs, adjoining or remote, are described in several pages. The only objection which we find against this portion of the author's narrative, and we venture to urge the same criticism against his exposition of the *symptoms* of stricture, is that it is somewhat deficient in force of expression. We believe that his statements are strictly correct, and that he exhibits a very full view of the subject; but we think that the truth will bear a much warmer tinting. The colours are all here, but they are not so artistically arranged and combined as they might have been. There is as much difference, in this respect, between our author's picture and that which Brodie has drawn of the same disease, as between a thunder storm as ordinarily depicted, and one which roars and flashes from the canvass of Turner or Vernet.

The *causes* of stricture are stated to be either traumatic or inflammatory, most frequently the latter; and among these, gonorrhœa is alluded to. The author does not believe that the *injections* which are made use of in the treatment of this variety of inflammation should be held answerable, as a general rule, for the production of the coarctation; he very properly, we think, ascribes this condition to *the disease*, and not to the means used for its cure.

In his account of the *treatment* of this affection, Professor Gross describes, as the most important methods, those by dilatation, compression, cauterization, incision, and external division; and exhibits what he considers are the conditions of the stricture to which each plan is most applicable. He lays down certain preparatory measures as necessary to be enforced prior to the commencement of any direct mechanical interference. He says, very justly,

> "Too much stress cannot be placed upon this preliminary treatment; indeed, I should consider it highly culpable to reject it under any circumstances. When the way has been thus paved, the particular kind of treatment is to be determined by careful consideration of the nature of the obstruction. There are few points in surgery which require more judgment and experience than this"—p. 633.

After alluding to, and rejecting as improper and insufficient, that plan which proposes to cure stricture by "constitutional means, especially rigid abstinence carried almost to starvation, and the daily use of nauseating doses of tartarized antimony, or the frequent exhibition of emetics, conjoined with rest in the recumbent posture, and the avoidance of all sources of bodily excitement," he discusses the method of *dilatation*. This plan, he admits, "is more frequently applicable than any other that has yet been devised." He describes the instruments various in material, dimensions, and shape, which are, or have been, employed, and expresses his own preference as follows:—

> "My conviction, founded upon ample experience, is that the very best instrument for dilating a stricture is the common silver catheter, with a slightly conical point. I have employed this instrument in the treatment of this affection for upwards of twenty years, and nothing could induce me to abandon it."

Its recommendations are stated to be its lightness, firmness, durability, and the fact that it is often requisite not only to pass through the stricture, but also to leave a hollow instrument in the bladder. Whether or not *all* these arguments are really valid can only be ascertained satisfactorily by personal trial. We have been inclined to think, in the few instances in which we have tried the silver catheter, that it is too light, and not sufficiently firm for the purpose; but far superior, in most cases, to the gum, linen, ivory, or whalebone bougies; the first two are too yielding, and the last too brittle to be relied upon. We would not, however, advance our own opinion on this point as in opposition to the author's, whose experience with the catheter has been infinitely greater than our own. Our preference is for the solid steel or silver instrument, and we think that the point should be rounded rather than conical. There are two methods, Professor Gross mentions, by which the process of dilatation may be accomplished: one by a rapid procedure, "a small or middle-sized" instrument being made to traverse the stricture, as gently and tenderly as may be, and allowed to remain in the bladder for twenty-four or forty-eight hours, or withdrawn through the stricture and immediately followed by one or more of gradually increasing size; the other by a more slow and patient process, in which an instrument is first introduced which will readily pass the obstruction, and after two or three days another of larger diameter, and so on at intervals, until a large instrument can be easily passed, when it may be used every day, at first, and gradually less and less often. By this proceeding also the catheter may occasionally be left in the bladder. The first plan is more rapid in its effects, and is the one which the author adopts; it is liable, however, to be followed by inflammation of the urethra, prostate gland, and neck of the bladder, although he has never known it to assume a serious character. The second method is more slow, but generally succeeds in the cases to which it is applicable, is less painful, and not liable to produce any injury. Dr. Gross says, p. 639—

> "The process of dilatation, or, as it might with great propriety be termed, the treatment by compression, is mainly applicable to soft and recent stricture. To those of an opposite character it is utterly unsuited, and should always give place to incision, either from within or without. I have no patience with dilatation for the removal of a hard, tough, narrow, and almost impermeable obstruction; such a case cannot be managed successfully by such a procedure; the most prolonged use of the instrument can do no good, and is only calculated to deceive the patient and bring surgery into discredit."

And in speaking of *compression* as applied to the anterior face of the stricture, he expresses strongly his want of confidence in it, entertaining, indeed, "a feeling against it almost amounting to aversion." Now we think that, in view of the success which Brodie and other distinguished surgeons have met with in the treatment of this affection by dilatation, and in view also of the acknowledged dangers and unfortunate results which have attended the employment of the other chief curative means, cauterization and incision, this decided declaration of our author is rather hasty and exclusive; and it is calculated to do harm by inducing those who have not his own skill in the use of instruments more dangerous than the dilator, to give up a safe, and, if patiently pursued, successful practice, for one which in their hands will probably do much more harm than good. It is, perhaps, the author's disinclination to, and comparative want of trust in, this plan of treatment, which has made him somewhat less careful and minute in his directions for conducting it. He lays small stress upon the dangers attending the employment of dilating instruments, such as the formation of false passages, injuries to the urethra or the prostate gland, and on the way of avoiding these accidents; nor does he allude to the importance and decided advantages of administering opium or chloroform, particularly the former, just before, or immediately subsequent to, the use of the dilator. And he might, we think, with perfect propriety have included in his enumeration of the cases to which this plan of treatment is appropriate, others besides such as are "soft and recent."

The following observations on the treatment by *cauterization* are extremely judicious:—

> "Cauterization, properly used, is a valuable curative agent; but if indiscriminately employed it is capable of doing serious, if not irreparable, mischief. The circumstances to which it seems to be more particularly adapted and to which, in my judgment, it ought to be restricted, are those in which the stricture, without being very tight or extensive, is of a firm, gristly, and resilient character, and in which there is an undue amount of morbid sensibility of the mucous membrane of the urethra. I never resort to it where the obstruction is either very slight or very great; for in the former case I have rarely failed to effect a cure by dilatation, and in the latter I have almost always been obliged to have recourse to division. It may be further observed that cauterization should seldom be relied upon alone, but that its action should always be aided by the bougie or catheter, a mode of proceeding which greatly expedites the cure, and affords an additional guarantee against relapse, which is so apt to occur when this precaution is omitted"—p. 641.

His directions with regard to the use of caustics, both the nitrate of silver and the potassa, the latter of which he has often employed with the most happy effects when the lunar caustic had failed, are worthy of all reliance. But, we would ask, would it not have been well, while setting forth the applicability and the merits of the caustic, to likewise point out its dangers and the objections to its employment? for that there are strong contra-indications to its use cannot be denied.

> "When a stricture is very old, firm, and unyielding, or almost cartilaginous in its consistence, no mode of dilatation, however judiciously and perseveringly employed, can succeed, either alone or in combination with cauterization, and in such a case I never hesitate to resort at once to *incision*, satisfied that nothing else will answer. I have repeatedly had under my charge patients who had been subjected to the treatment by dilatation for months and months, without the slightest benefit, and who were almost instantly relieved by the operation under consideration. This fact has been witnessed again and again by my private pupils, and by the public classes of the University of Louisville. And why should there be any hesitation or doubt concerning this operation? Where are its dangers, or the difficulties of its execution? I confess I cannot see any," &c.—p. 646.

We need not, surely, say that the last three sentences of this quotation prove that the author is so wedded to this method that he has become blinded to its dangers, or that he has closed his eyes to the facts which have been repeatedly cited to caution the profession against its employment. The instruments which he advises for the performance of this operation are substantially like those of Stafford. But, although we cannot speak so approvingly of the treatment by incision, if such a proceeding should become necessary, we should not hesitate to follow the author's directions.

A modification of this operation is that by *scarification*.

> "The process is best adapted to the milder varieties of firm, gristly contractions, seated in the spongy portion of the canal"—p. 649.

The last mode of treatment which Professor Gross expounds is that by *external division*. The operation which he describes is spoken of as being

> "By no means free from danger, and requires the most consummate skill for its successful execution. None but a madman or a fool would attempt it, unless he had a profound knowledge of the anatomy of the parts, and a thorough acquaintance with the use of instruments. Of all the operations of surgery, this is the least to be coveted"—p. 650. "The method described is mentioned in such a way as to induce us to infer that it is the same as that which 'has recently met with a strenuous advocate in Mr. Syme, Professor of Clinical Surgery in the University of Edinburgh.'"

But there is an important difference between the two operations. In that described in the text, p. 651, the position of the patient is the same as in lithotomy.

> "A staff or grooved director, either straight or slightly curved, is *conveyed to the seat* of the obstruction, and confided to an assistant, who also holds up the scrotum. The surgeon, sitting on a low chair, or resting upon one knee, takes a narrow-bladed scalpel, and makes an incision into the raphé of the perineum, about an inch and a quarter in length, taking care, on the one hand, not to interfere with the rectum, and, on the other, not to extend it too high up towards the bulb of the urethra. The knife is plunged in, at the first stroke, to a considerable depth, and is then used to divide, by successive touches, the parts overlying the stricture. Feeling now for the end of the staff, the point of the instrument is inserted into the contracted part, which is next freely divided from before backwards. A catheter is now introduced into the bladder, and the case is treated, to all intents and purposes, as one of lithotomy."

The italics in the above are of our own making. In Mr. Syme's operation,

> "A grooved director, slightly curved, and small enough *to pass readily through the stricture*, is introduced, and confided to one of the assistants. The surgeon, sitting or kneeling on one knee, now makes an incision in the middle of the perineum, or penis, wherever the stricture is situated. It should be about an inch or an inch and a half in length, and extend through the integuments and subjacent textures exterior to the urethra. The operator, then taking the handle of the director in his left and the knife, which should be a small straight bistoury, in his right hand, feels, with his forefinger guarding the blade, for the director, and pushes the point into the groove behind, or on the bladder-side of the stricture—runs the knife forwards, so as to divide the whole of the thickened texture at the contracted part of the canal—and withdraws the director. Finally, a No. 7 or 8 silver catheter is introduced into the bladder and retained by a suitable arrangement of tapes, with a plug to prevent trouble from the discharge of urine." (*On Stricture of the Urethra and Fistula in Perineo*, by James Syme, 1849.)

The peculiarity of this procedure consists in cutting down upon a grooved director previously introduced *through the stricture*, whereas in Dr. Gross's account "the director or staff" is merely inserted along the urethra *as far as the commencement of the obstruction*. But this element in the operation is of great importance in giving more certainty to the course of the incision, and we think that it renders Mr. Syme's proceeding much the more worthy of imitation.

Professor Gross next directs his attention to polypoid and vascular tumours of the urethra, neuralgia, hemorrhage of, and foreign bodies in, this passage. We have already occupied so much space in our notice of this work that we shall not comment upon these chapters.

Chapters 9 and 10 present respectively a very good exposition of the pathology and treatment of urinary abscess, or, as Professor Gross prefers, and for very sufficient reasons, to term it, "*urethral*," or "*sub-urethral*" *abscess*, and *fistula of the urethra*. The author differs from Sir Benjamin Brodie in not limiting the starting-point of these affections to the lining membrane of the canal, but admits that they may also originate in causes acting from without and involving the lining membrane of the urethra subsequently.

The only remaining topics treated of by Professor Gross are *false passages* from the urethra, *lesions of the gallinaginous crest*, and *inflammation* and *abscess of Cowper's glands*.

We have long trespassed upon the patience of our readers, but the character and bulk of the volume must be our apology. It has afforded us much pleasure and instruction, and we shall always refer to it for advice in cases of difficulty and doubt. We sincerely congratulate its author upon his happy execution of so laborious and responsible an undertaking; and we hope, for our own benefit, for the advancement of professional knowledge in our country, as well as for his peculiar fame, that he will devote his time and talents to other subjects of equal importance to those which he has elucidated.

We shall be expected to speak of the literary and mechanical execution of the book. The style is plain, rather severe; it is not free from inelegancies and inaccuracies, but we attribute them to the author's not having had the opportunity of revising the publication. The plates are admirably done, and the whole appearance of the volume is very commendable.

F. W. S.

Art. XI.—*Letters to a Candid Inquirer on Animal Magnetism.* By William Gregory, M.D., F.R.S.E., Professor of Chemistry in the University of Edinburgh. Philadelphia: Blanchard and Lea, 1851.

Dr. Gregory is a most thorough believer in Animal Magnetism. He believes everything that ever was asserted of it, and is evidently prepared to believe everything that ever will be asserted of it. His is no partial possession. Animal magnetism has as complete control over him as he would ever wish to have over one of his subjects through the "odylic influence" that streams from his fingers, or his eyes, or from his intense will. His belief is not only a monstrosity, but an enormous one. Its big open mouth swallows everything. It would be a small thing to say of it that it "swallows a camel."

We have no idea of writing a formal staid criticism upon his book. Such a mass of folly, though it wear a scientific guise, and come from a professor in the ancient and renowned city of Edinburgh, and is lauded in certain literary and scientific quarters, deserves no such notice. We will glance, however, at some of the notions, or rather dreams, of the professor, as illustrative of the *immense capabilities of human belief.*

Dr. Gregory not only believes in all the different ways in which the magnetic influence is exerted—by passes with the hand, by breathings, by the fixed look, and by the silent but fixed will; but he also believes that the subject needs not to be near the operator. They may be separated by miles upon miles of distance, and by walls of brick and mortar; and yet the effects come. Why should he refuse to believe this? He has seen it exemplified in his own family. Mr. Lewis, "the distinguished negro magnetizer" (negroes being discovered to be highly susceptible subjects, this field promises to be highly cultivated by amateurs), was present at the professor's house one evening, and operated upon the company, about fifty, *en masse.* A member of the family, a lady, who was one of those that chanced to be affected, had a headache in consequence. The professor spoke to Mr. Lewis about it in the morning. He said, "Oh! never mind her headache. I shall think of her some time to-day, and dismiss her headache." At half-past three she was quite sure that the absent Mr. Lewis was magnetizing her, and soon went to sleep and woke up free from the headache. It was of course found that Mr. Lewis did magnetize her at that time, although he was in another street at some distance. How very ungallant, not to say cruel, Mr. Lewis was to wait from morning till precisely half-past three in the afternoon before he relieved the lady! Why he did not do it at once when the professor spoke to him we are not informed.

The magnetic influence, Dr. Gregory asserts, can be sent to any distance attached to some substance, as water, paper, gloves, &c. A Mr. Atkinson, who, though not a physician, employs mesmerism, as Dr. Gregory says, to a great extent as a medicinal agent from pure motives of benevolence, sent a pair of mesmerized gloves to a patient in Paris "suffering from tic"—they "relieved her intense suffering, which all other means had failed to do." He sent "newly-mesmerized gloves" every week, as the old ones not only lost their power, but came back charged with an influence which caused disagreeable sensations, and even gave him a little shock from the lady's tic. A mesmeric cleansing was therefore needed before they could be used again. Mr. Atkinson says, "I have experienced the same sympathetic influence as in the case of gloves from letters, especially if the paper were glazed, and I could thus tell the state of the patient before reading the letter. Sometimes the heat and pricking have been so strong, that I have laid the letter on the table to read without touching it. The influence from a feverish state would cause my hand to feel hot and feverish, even to others, the whole day. On one occasion, on reading a letter from a distance, I had the sensation of tears. It was so strong that I felt sure the writer had been in tears while writing it, although nothing in the case or in the letter led to the conclusion. It proved, however, on inquiry, that the writer had been in tears, and that the tears had fallen on the paper." This same Mr. Atkinson also says, "On one occasion I *breathed* a dream into a glove, which I sent to a lady; the dream occurred"—that is, we suppose, she had the dream the next time that she slept. As he is so benevolent, we presume that the dream he sent was a pleasant one. The learned comment of Professor Gregory upon these statements is that they "tend to throw light upon the propagation of disease by contagion."

The professor is a full believer in clairvoyance in all its modes and forms. Clairvoyants do not see with their eyes at all. Such vulgar means of vision are discarded altogether. They see from the side or back of the head, from the pit of the stomach, &c., and sometimes from no particular part. They see at all sorts of distances, and through all sorts of things. It is generally quite immaterial to a practiced clairvoyant whether she (I say *she*, for clairvoyants are commonly women) is to see and describe things in the room, or in another house, town, or country, or world. "Yet it often happens," says Professor G., "that a clairvoyant, who can see and describe very well all that is in the same room, or the next room, or even in the same house, cannot thus travel to a distance, without passing into a new stage." When once in this "new or travelling stage," the operator can send the subject anywhere, into any house far or near, and she will describe what is passing there. So says our erudite professor, and so say magnetizers generally. If this be so, it appears strange to us that clairvoyance has not played a very considerable figure in revealing family secrets, and making mischief in neighbourhoods. But we presume that the reason is that magnetizers are a peculiarly pure and benevolent class of men, and are uncommonly free from the instigations of the devil.

Sir John Franklin has received a very large share of attention from clairvoyants. They have seen his vessels encased in ice, and described minutely the situation of things—as minutely as some of them described the destruction of the Atlantic just before the news of her safety reached New York. Some clairvoyants predicted the return of Sir John a long time ago. Dr. Gregory finds a ready excuse for this blunder in their benevolence—he thinks it is because they "are strongly affected by sympathy with the feelings and wishes of those who consult them, which feelings and wishes they, as it were, reflect."

Professor Gregory agrees with his brother magnetizers in thinking that clairvoyants have the power of detecting thieves, and cites some cases in proof of it. He mentions a clairvoyant who traced fifteen bales of cotton, which had been stolen from a vessel in New Orleans, to another vessel in Havre. The cotton was found where the clairvoyant said it would be.

If what magnetizers assert be true, it is a little strange that animal magnetism has not been put to more practical use in recovering lost and stolen property, and in detecting thieves, and, indeed, all sorts of criminals. The subject has long been before the community, and there has been ample time to demonstrate most fully the capabilities of animal magnetism in this respect. The public seem to be singularly obstinate in rejecting the precious boon which is offered them by the magnetizers. Although most new things meet with a very ready reception with the multitude, whether scientific men believe them or not, the new discoveries of animal magnetism, though they answer very well for an evening's entertainment, do not seem to be practically believed to any great extent. At least this is the case with the most valuable of them. Though clairvoyants are proved, as is asserted by such wise men as Dr. Gregory, to have such powers, their services have as yet been seldom called for in detecting thieves and other criminals, and never, we believe, by those who are particularly skilled in such matters. The old-fashioned modes of detection are still in vogue with the police. Either the community must be singularly blind to their interests, or Professor Gregory and his compeers are blind to the truth—we will not say which.

We once witnessed an examination of a clairvoyant in regard to some stolen money. All the questions were prompted by a suspicion of a particular individual, and were, therefore, leading questions, and were answered accordingly. Though to us it was a very bungling performance, not having the magnetic capacity of belief, the many mistakes made by the clairvoyant did not prevent the rest of the company from believing it all to be correct. And the thief was followed upon the track marked out, but no such man had been seen by any one on that track, although one of the places where the clairvoyant saw him stop was a public bar-room.

If clairvoyants can see things through walls, through anything, and at great distances, it is not strange that they can see what is within themselves. Upon this power of *introvision,* as it is called, Dr. Gregory thus remarks:—

> "The most eloquent descriptions ever given of the wonders of the human body, never produced half the effect upon the mind which is caused by the simple but graphic words of the clairvoyant, who is perhaps altogether ignorant of anatomy, and yet sees, in all their beauty and marvellous perfection, the muscles, bones, vessels, nerves, glands, brain, lungs, and other viscera, and describes the minutest ramifications of nerves and vessels, with an accuracy surpassing that of the most skillful anatomist. He will trace any vessel or nerve in its most complex distribution; the whole to him is transparent, bathed in delicate light, and full of life and motion. Some at first are terrified at seeing these wonders, but soon learn to admire and delight in them. But it is only a certain proportion of clairvoyants who pass into that particular stage, and as experiments are most frequently made on the uneducated, or half educated, they are often at a loss for words to describe what they see. I cannot doubt that when intelligent medical men shall be themselves rendered clairvoyant, some useful information will be derived from the exercise of this power.
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> "It is easy to understand, that when the sleeper sees his frame in this perfect way, he can detect disorder and disorganization in it. This, indeed, he very readily does, and his diagnosis is often confirmed by that of the physician who attends him when he is suffering from illness.
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> "The clairvoyant, in some cases, possesses the same power in reference to the bodies of those *en rapport* with him. He describes their structure, and its

derangements; and I have good reason to believe that in some instances, when the disease is of an obscure nature, his diagnosis has proved, and has been acknowledged to be, correct.

"The clairvoyant who possesses this power can often exercise it at a distance, with the help of the hair or of the hand-writing. I have seen it done both ways, and repeatedly with very great minuteness and accuracy. The observations of the clairvoyant have always corresponded to the opinion of the physician who knew and treated the case, but have often gone further, and in the subsequent opinion of the physician, correctly in the cases I have studied."

Now all this is asserted, not by some impudent and ignorant travelling lecturer, but by *Doctor* Gregory, Professor of Chemistry, in the city of Edinburgh. If it be true, what a change it will effect in medical science! Clairvoyance is to be the great means of exploration both in health and disease. Every physician must have his clairvoyant. And he need not leave his study to diagnose disease—a little of the patient's hair, or even some of his writing, will be all-sufficient to reveal his condition. From what toils, what exposures, will this save the physician!

Wonderful as all this is, there are greater wonders still. The clairvoyant, says Professor Gregory, "will often predict the course of disease and its termination, in those persons with whom he is in *rapport* or sympathy." And he mentions a case in which the time of death was accurately predicted six years before it occurred. And this power of *prevision*, as it is termed, has relation not merely to sickness, but exists in regard to all kinds of events. Animal magnetism has restored to the world the gifts of prophecy in the persons chiefly of women and negroes, the latter having been found of late to be peculiarly susceptible as clairvoyants.

But the clairvoyant has not only the power of prevision, but of *retro*-vision also. And Dr. Gregory suggests that "by the means of some very lucid clairvoyants, many obscure points in history might be cleared up, and that by the discovery of documentary evidence." We fear that the public will be as obstinate about this as they have been about employing clairvoyants in the detection of thieves.

The past, the present, and the future, are then, according to Professor Gregory, all open to the eye of the clairvoyant! When all the scientific and learned men in the world shall come to agree with him, and each shall be busy with his clairvoyant, how vast and varied and rapid will be the accumulation of knowledge! A new era will open upon us! All the old lights will become dim, extinguished in the meridian blaze of clairvoyance!

Professor Gregory is a full believer in what is called phreno-magnetism. And from his own account of himself, he is a very skillful player upon the bumps—they always answering to his touch as readily and correctly as the keys of a piano would do. We have heard, in our day, some wrong notes responded to travelling magnetizers as they have played upon the bumps, but we presume Dr. Gregory never makes any mistakes, nor his subjects; he knows just where the organs are, and his subjects undoubtedly know quite as well as he does.

Dr. Gregory informs us that only a few of the clairvoyants can thus have their heads played upon, and, as he is never at a loss for a reason for anything, he thinks that "the sensitiveness to touch over the cerebral organs belongs to a particular stage of the sleep." He gives quite a full account of two cases in which the cerebral music was exactly to his mind. Of one of them, he says, "If, while benevolence was in action, I touched acquisitiveness, he instantly collared me to recover what he had given me; if combativeness was touched, before I could remove the finger, he had struck out with his fist, and assumed a very pugnacious attitude. When I combined benevolence and acquisitiveness, he pulled out money and offered it; but, on my attempting to take it, always withdrew it, his eyes being closed, and told me he required it more himself. When in the act of falling on his knees, veneration being touched, the slightest touch on self-esteem sent him up like a shot, or combativeness made him attack, in the fraction of a second, who ever happened to be before him. In short, I could *play* on him exactly *as on an organ*, producing any expression, gesture, or action I pleased, simple or combined." This, with the addition of the baby scene, produced by touching philoprogenitiveness, is a very good representation of the exhibitions of phreno-magnetism made night after night, with all the marks of a thoroughly learned lesson, by travelling lecturers.

Dr. Gregory speaks of some peculiarities in this case. "I could excite," he says, "laughter by touching the organ of gaiety or mirthfulness. But I could also cause laughter by touching the angles of the mouth, when it often became very violent. In either case, I had only to touch the middle of the chin, in order instantly to change the laugh into the profoundest gravity. This fact was pointed out to me by Mr. Bruce, who had studied the case four years before. He also told me that touching a certain part of the leg caused the young man to dance. I tried this, but probably did not touch the right spot, or touched it too strongly, for the result was a sudden and most violent kick, fortunately received by a table, and accompanied by a very angry pantomime. This I saw several times." As this clairvoyant had been practicing at least four years, it is no wonder that, like a true amateur, he added some "peculiarities" to the otherwise monotonous exhibitions of phreno-magnetism. But these peculiarities are very peculiar. Professor Gregory accounts for them by saying that "the effect of touching certain parts of the body no doubt depends on their nervous connection with the brain." That is, the corners of the mouth in this clairvoyant had a "nervous connection" with the organ in the brain that makes us laugh, the middle of the chin with that organ that makes us grave, a particular spot on the leg with the organ that makes us dance, and another spot, so close to the last that even so acute an observer as Dr. Gregory mistook between the two, with the organ that makes us kick with violence and anger—some department, we suppose, of the organ of combativeness. Dr. Gregory hints that perhaps he touched the dancing spot, but "too strongly," and therefore kicking resulted in place of dancing; but we think that on further reflection he will conclude, that it is more probable that the kicking and dancing spots are distinct, but lie very near together. Indeed, some further experiments with this clairvoyant, under the observant eye of Dr. Gregory, might settle the matter. He has settled quite as nice points before. For example, he says, "In the region of the supposed organ of alimentiveness, I found within a small space three different points, the touching of one of which produced excessive desire to eat, of another the desire to drink, of the third, sensations of smell. To obtain these results, it was necessary only to move the point of the finger one-fourth or one-eighth of an inch, the three points lying in less than the surface of a shilling." Now the nice fingers that made this discovery are certainly competent to decide beyond a doubt whether the "nervous connections" with the dancing and kicking organs are in one spot, or in two different spots.

Professor Gregory thinks that Baron Von Reichenbach has discovered the existence of a power, or force, or influence, or fluid (for all these terms are used in relation to it), which he calls odyle. It is analogous, it is said, in many respects, to the imponderables, light, heat, &c. It is the agent which, in his view, produces all the various phenomena of Mesmerism, Animal Magnetism, Electro-Biology, Hypnotism, Psychology, &c., with which believers in such things have been dazzled for the last half century. Dr. Gregory speaks of the "odylic atmosphere of the operator," which it seems is distinctly "luminous" to many "lucid persons," and the phenomena are to be attributed to "emanations" of this odyle, which "traverses space as light does; only, as appears from the observations of Reichenbach, not quite so rapidly."

In explanation of clairvoyants seeing things at a distance, Professor Gregory says, "It is obvious that to an influence like odyle, as to light, distance may be a matter of no importance." But this does not exactly explain why they see through walls of stone, or brick and mortar. If the odyle goes through them, light, which he compares to it, does not—in this respect, these two imponderables differ, which Dr. Gregory, with all his acuteness, has failed to notice. Perhaps odyle is more penetrating than light, or is more diffusible, and so gets round obstacles more readily than light does. It seems to move in very straight lines, in some cases at least, for, when Dr. Gregory plays on the keys of the cerebral organ in phreno-magnetism, the odyle goes straight to the organ pointed at, and there is no escape of it to the neighbours, even though it may be small, and may stand amid a cluster of small organs. There is no getting away from facts, however; and what if odyle does sometimes go very straight, and at other times take a crooked and winding course! So subtle a thing may, of course, be very accommodating—it must be, in order to produce such a variety of results as Professor Gregory attributes to it.

We have no idea of treating extensively of this new imponderable, but will merely notice some of its modes of operation.

Dr. Gregory tells a story about "an old house near Edinburgh, long since fallen down," of the truth of which he has no doubt (doubting being a thing to which he is little accustomed), and he endeavours to account for the facts by animal magnetism. A box of bones was found, he says, upon the premises; and he accounts for the ghosts by supposing that the odyle from those bones entered the brains of those who saw them, and there produced the visions.

Where past events are seen by the clairvoyant, Dr. Gregory supposes that he "follows their odylic traces upward." That is, every event sends down the stream of time an "odylic trace," and the clairvoyant (*how*, he does not inform us) follows it up till he comes to the event itself. He does this very much as "a dog, liberated from confinement, traces his master." This theory, he says, "agrees with that old one, which maintains that every event leaves an indelible trace, which continues to exist as long as the world to which the event belongs." But how the clairvoyant sees *future* events it seems to puzzle even Professor Gregory to tell. The "odylic traces" fail him here—no odyle can come from things which do not as yet exist. Though he hints that some explanation may be found in the old saying that "coming events cast their shadows before," and that the present contains the germs of all that is future, he says, with an air of doubt and carefulness we have not seen in him before, "We come here on ground which quakes and gives way beneath our feet." But he says also, "I hold fast to the facts;" and he is very sure that "patient and persevering research, carried on in the sincere love of truth, will, in the end, enable us better to understand even these obscure phenomena." And we have no manner of doubt that his expectation will be realized. For minds, like those of Reichenbach and Professor Gregory, that are satisfied with the very "luminous odylic" explanation of *retro*-vision, cannot exist long without having quite as satisfactory an explanation of the mode of seeing coming events. For our part, we are puzzled to know why Dr. Gregory, who has explained to his own satisfaction so many mysteries quite as great, all at once balks at this.

Professor Gregory very strongly commends the study of animal magnetism to those who have the care of the insane. He says that, "in many cases the essence of insanity is some disturbance of the natural distribution of odyle in the system." He believes in the old idea of the agency of the moon in causing insanity, and says, "the effect of the moon on the insane" is to be referred to the fact that its rays are "strongly charged with positive odyle."

Odyle, he thinks, is the agent in all sorcery, witchcraft, magic, divination, demoniacal possession, &c.

Even love comes of odyle. The arrows of Cupid, according to Dr. Gregory, are nothing but "emanations of odyle." On this subject, he thus discourseth: "Sympathy often produces a strong attraction between two persons who see each other for the first time. Neither of them can explain it, but both feel it, and their love at first sight is no fancy, but a reality. It arises, in part, from a pleasing correspondence between the magnetic influences of the parties, and when this is the case, it is as durable as strong. Nay, it is well known that there are many persons who frequently quarrel after being long together (disturbances of the odyle, we suppose), yet are quite wretched if separated, and infallibly come together (by the force of odylic attraction of course), till a new quarrel again forces them asunder; again to feel miserable apart." What scientific sentimentality! Dr. Gregory will, ere long, be the poet-priest of animal magnetism!

Antipathies, too, come of this busy odyle. Dr. Gregory does not tell us *how*—he only gives us the fact, which we suppose he, or Reichenbach, has demonstrated to his satisfaction, and *therefore* it is a fact. Whether the antipathy be to a person, an animal, or a substance, the odyle somehow causes it.

Professor Gregory thinks that odyle, or magnetic influence, is the cause of numberless wonderful phenomena in animals. He almost resolves all instinct into odyle. After speaking of bird-charming and horse-taming, he says, that "Miss Martineau has also recently published a case, in which she not only magnetized a cow suffering from acute disease, but cured the animal by magnetic treatment." An interesting episode this would make in a Bucolic, illustrative of odylic love; perhaps Professor Gregory will try his hand at this.

The "snail telegraph" is adduced by Professor Gregory as a striking example of the agency of animal magnetism, as the source of sympathy in animals. The account which he gives of it is this: "Every letter has a snail belonging to it in Paris; while in America, each letter has also a snail sympathetic with that of the same letter in Paris; the two snails of each letter having been at some period, and by some process, brought into full sympathy, and then separated and marked. There is, of course, a stock of spare snails for each letter in case of accident; but it is found that these animals will live for a year without food, should that be necessary. When a word is to be spelled in Paris, the snail belonging to the first letter is brought by some galvanic apparatus, not yet fully described, into a state of disturbance, with which his fellow in America sympathizes. But this requires to be ascertained; which is done by approaching in America to all the snails successively a testing apparatus, not described, which, however, contains a snail. On the approach of this, the snail whose fellow in Paris has been acted upon, exhibits some symptom which is not exhibited by any other, and the corresponding letter is noted down. This is done with each letter, and thus the word is finally spelled.

"Now all this may appear at first sight," continues Professor Gregory, "very absurd and ridiculous. I confess (indeed !) it appeared so to me when I first heard of it. But, when I recollected all I had seen of sympathy in man, and all that was known about sympathy in the lower animals; and when I read the account given by M. Allix, a gentleman well versed in science, of the successful experiments at which he had assisted, I perceived that the only difficulty lay in admitting the fact of the extraordinary sympathy of snails, and that this being granted, all the rest was not only possible, but easy." The details of this new "discovery" have not yet been published, although the discoverers, two Frenchmen, "have been for ten years engaged in bringing their discovery into a practical form." But Dr. Gregory seems to think that the facts are well attested, and says, "It will certainly be very remarkable if a snail telegraph should come into action; which, in spite of the proverbial slowness of the animal concerned, should rival in rapidity the electric telegraph, and perhaps it in security; inasmuch as there are no wires to be cut by an enemy, besides being infinitely less costly; since no solid tangible means of communication are required, and all that is needed is the apparatus at either end of the line, and the properly prepared snails."

But there are other wonders to come besides the snail telegraph. The anticipations of Professor Gregory are brilliant, and fill him with enthusiasm. As we have a galvanometer and a photometer, he expects that we shall soon have an odylometer to measure all quantities of odylic force. But this is not all. He expects that we shall, ere long, have "an odylic battery, just as we have a galvanic battery," and says that, "when we shall have thus obtained the power of odylically affecting every man, a vast step will be gained." We agree with him that such discoveries as these "would at once do the work of a century in promoting the progress of odylic science." If the laboratory of the professor could be graced with the odylometer, the odylic battery, and the snail telegraph, what a blaze of odylic light would be concentrated there from the past, the present, and the future! And who could endure it but those whose bodies had been long "bathed in odylic light," and whose minds had been long saturated with odylic belief?

Such are some few of the notions and statements which we find in Professor Gregory's book. As we have read them, we have paused, we know not how often, and asked, Can it be that Dr. Gregory, the Professor of Chemistry in Edinburgh, really believes as he writes? May it not, after all, be a burlesque?

It was no part of our intention to examine critically, and to any extent, the subject of animal magnetism. The folly and falsehood which have been put forth under this name are mixed with so little that is true and valuable that we do not wonder at all that reasonable and scientific men are so little disposed to look into these subjects. There is so little wheat amid the abundance of chaff, that it is not worth the sifting. The time which would be consumed in doing it may be much more advantageously employed in fields of knowledge which yield a much larger and surer return for our labour.

We have seen enough in the exhibitions which have been made, and in the books which have been published, to convince us that the little that is true of all which is included under the name of animal magnetism, is to be attributed solely to certain *nervous conditions induced through mental influence.* The mixture of imposture with these conditions is a very strange mixture, it is true; but it is not an incompatible one. What physician of any experience has not seen occasionally in hysteric patients just this mixture? The prospect of notoriety, and that too among the titled, the rich, and the scientific, to say nothing of pecuniary compensation, suffices to convert many such patients into very skillful clairvoyants.

Sometimes there is no such mixture, but the exhibition is sheer unmixed imposture. And the operator, though he may not be an amateur, but an out and out impostor, is not always able to discern pure imposture from that which is not. We have seen a very celebrated magnetizer thoroughly in doubt whether a roguish boy was really in the so called magnetic state, or was playing a trick upon him. And we have known persons, as a matter of sport, to mingle among the subjects of the psychologist (so called) who, in obedience to his directions, were playing all sorts of antics, because they thought that they could not help doing so, and while they duped the operator, they acted their parts quite as much to the satisfaction of the audience as the dupes themselves.

While the amateur and scientific votaries of this science are for the most part duped by their subjects, we have no doubt that the lecturing exhibitors of animal magnetism, in its various forms, are as arrant a set of impostors as ever duped any community. And yet, whenever one comes along, a large audience is gathered, and among them are many of the intelligent and the influential, and some clergymen, of course, and generally some physicians. The exhibition is at least amusing; and the imposture is so well managed that but few have acuteness enough to detect it, if they wished to do so. The farce of having a committee of wise men to watch the operator is always gone through with as a matter of course, as giving an air of honesty and respectability to the exhibition. But any fair and thorough testing is most scrupulously avoided. We once made a proposition for such a testing to one of the most skillful and respectable of these travelling magnetizers, but though the fairness of the proposition was admitted, he continued with various excuses to delay the examination, till he had gone through with all his public exhibitions; and then he had no time to spare, even at a high compensation which was offered him, because he was in haste to go on, and dupe other communities.

It is worthy of remark that these lecturers seldom, if ever, appear a second time in the same place, however great their success has been. In large cities, it is true, it may be otherwise, because there the material for fresh audiences is abundant. So, too, the career of each lecturer is apt to be a short one—there is a constant succession of them. For the same reason the "science" continually changes its name, and appears with a new phase; and so we have Mesmerism, Animal Magnetism, Pathetism, Electro-Biology, Hypnotism, Psychology, &c. The subjects, too, however famous they become, do not last long, and new ones rise to take their places. And those localities where animal magnetism has made its most signal displays, and astonished and led captive almost the whole community, have in a little time lost all knowledge, all "trace," of the odyle that was there, so that one would suppose that some strange power had utterly banished this agent, though for a time the place was "luminous" from its presence. Perhaps no place in this country has been more famous for the doings of animal magnetism than Providence was some dozen years ago. The odyle was then so abundant there that its "emanations" drew (we suppose by their peculiar attractive power) many pilgrims to the favoured spot from distant places. Among them was Colonel Stone, who published his experience in a pamphlet, which was for a time very famous. But short was this brilliant display of odyle there. The reason is probably to be found in the fact, which Professor Gregory comments upon in his work, that odyle has, like electricity, a strong tendency to an equilibrium, of course preventing any excessive accumulation of it from continuing any length of time. Colonel Stone's pamphlet, M. Poyen the operator, and Miss Bracket the subject, soon ceased to be "luminous," and went into the shades of forgetfulness; and the people of Providence are to this day in entire darkness on the subject of animal magnetism. Their "odylic light" is not only in total, but as it seems in final eclipse.

Professor Gregory makes great complaint, again and again, that scientific men, and especially physicians, have neglected animal magnetism, and throws out the usual threadbare allusions to Galileo, Copernicus, Harvey, Jenner, &c. This might be expected of quacks and travelling exhibitors—they have the excuse of ignorance. But a professor in Edinburgh must know better—he must know that new things are not treated now as they were in the dark times of Galileo and Copernicus, when antiquity bore such sway; and that the discoveries of Harvey and Jenner, though they met with opposition, were in the course of a few years welcomed by almost the whole body of the medical profession, and, therefore, furnish no parallel to the steady rejection with which animal magnetism, and its associate phantasm homœopathy, have met from them for more than half a century.

Dr. Gregory begins his book with a laboured consideration of the various objections which have been brought against animal magnetism. He manages this quite dexterously, misrepresenting some objections, trumping up some that were never adduced by intelligent and scientific men, and avoiding continually the real points at issue in the case. The main, the grand objection he does not state, nor even allude to it with any distinctness—viz., *that the alleged facts are most of them not proved.* Though the believers in this "science" make great boast of their facts, they are exceedingly loose in regard to the evidence upon which their facts rest. The main points are often wholly neglected. A single example will suffice, though a multitude might be cited. It is a case of which Colonel Stone makes great parade in his pamphlet. He gave the clairvoyant a sealed packet with a very odd sentence in it, a part of which she read, as the colonel supposed, without opening it. But how did he know that she did not open it? Simply because it was a day or two after returned to him apparently in the same state as he gave it to her. This he considered to be good proof. But we do not—it is defective in its most essential point. If she could read the packet without opening it, why did she not do it in Colonel Stone's presence? There is not a particle of evidence offered to show that any one saw her do it. The true test was an easy one, but it was not applied. There is such a thing as skill in opening seals and replacing them so that it is not easy to detect it. And until we have the proof that this was not done, we are not warranted in believing that the clairvoyant read through the envelope. Another similar case is given in the colonel's pamphlet, against which the same objection lies.

Similar defects in the evidence upon which animal magnetizers ask for our belief are continually presenting themselves. And they seem utterly blind to the proofs of imposture on the part of their subjects. The occasional detection of them by others of less credulity does not seem to open their eyes in the least. The Okeys, that duped Professor Elliotson and a formidable troup of scientific and learned men in London, were at length proved beyond all doubt to be impostors—but the believers believed still. And so of other cases. Those who are once thoroughly possessed with the spirit of delusion are seldom converted from their errors.

It is curious to observe how belief in one absurdity prepares for belief in others. A propensity is created which manifests itself whenever the occasion presents. The possession is ordinarily such that the spirit of delusion may well be termed *legion.* Most various and incongruous are the beliefs which it generates. It is eager for all novelties. For this reason we had not a doubt, after reading a little way in Dr. Gregory's book, that he was a believer in homœopathy, and we found in the latter part of it that it really was so. And we presume that Professor Henderson, the great representative of homœopathy in Edinburgh, like his master Hahnemann, is a full convert to animal magnetism—if it be otherwise, it is an unwonted phenomenon. The same transgression of the rules of evidence which is required for the belief of the one is required for the belief of the other.

We know nothing of Dr. Gregory's standing as a professor of chemistry. Chemistry is so exact a science that the rules of evidence which apply to it are very simple. And Dr. Gregory does not seem to understand that, when he passes from chemistry to the examination of the phenomena of life, and spirit, and disease, mingled and complicated as they are, vastly more caution is needed in order to ascertain the truth and avoid error. One thing is certain, that Professor Gregory's dabbling with animal magnetism will not improve him as a teacher of chemistry. The moment that anything complicated shall occur—anything in which credulity or a disposition to theorize will be apt to lead astray—Dr. Gregory will be led into error. It cannot be otherwise with one who expects ere long to see in his laboratory an odylometer, an odylic battery, and perhaps a snail telegraph.

As to the complaint made by Professor Gregory, that physicians and scientific men generally refuse to look into animal magnetism, we remark that, *in every case where they have examined it with any thoroughness, most of its pretensions have been proved to be false.* And this leads us also to remark, in conclusion, that the duty of all intelligent men clearly is, either to have nothing to do with it, or to test its merits according to the strict rules of evidence. The half-way examinations which they have bestowed upon it, as exhibited by travelling lecturers, have only given currency to this delusion, and through this to others; and thus respectability, and honesty, and even science have been made to favour tendencies, which, by encouraging loose habits of reasoning and belief, are undermining the very foundations of truth. In this way, physicians have encouraged that loose and theorizing observation which, more than any other cause, has retarded the progress of medical science; and clergymen have fostered errors which are cutting loose many minds from all reason, and of course from all rational religion. W. H.